

**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**  
**Water Quality Control Division**  
**Attn: Bryan Pickle**  
**4300 Cherry Creek Drive South**  
**Denver, Colorado 80246-1530**  
**303-692-3500**  
**303.782.0390**

Date Stamped as received by

GROUNDWATER RULE  
**4 Log Inactivation of Viruses Certification**

The Groundwater Rule (GWR) was promulgated on November 08, 2006. The purpose of the rule is to provide-increased protection against microbial pathogens in public water systems that use groundwater sources. Many Public Water Systems (PWS) in the State of Colorado apply a primary disinfectant. Systems providing 4 log inactivation of viruses and conducting 4 log inactivation of viruses compliance monitoring are exempt from the triggered source water monitoring requirements of the GWR. In order to receive this exemption the system must monitor at a Department approved location and must maintain a Department approved chlorine residual at that location. In order for a PWS to receive Department approval, the public water system will need to submit the following information:

A. Project and System Information			
System Name			
Project Title			
County			
PWSID (Assigned by Division)			
If construction of new waterworks, or improvements to modify the treatment process of an existing waterworks, are required for a public water system to achieve and/or monitor for 4 log inactivation of viruses, plans and specifications for such construction, improvements, or modifications must be submitted to, and approved by the Department prior to construction.			
Design / Operations Company			
Design Engineer / Operator		CO License Number	
Address			
Email			
Phone		Fax	
System Owner			
Representative			
Address			
Email			
Phone		Fax	
B. Brief Project Summary and Treatment Description			
Please mark the appropriate box for sections C and D			
C. Public Water System Type	D. Primary Disinfectant Applied		
Community < 3300 population		Chlorine Gas	
Community > 3300 population		Sodium Hypochlorite	
Non-Transient-Non-Community < 3300 population		Calcium Hypochlorite	
Non-Transient-Non-Community > 3300 population		Chlorine Dioxide	
Transient, Non-Community < 3300 population		Chloramines	
Transient, Non-Community > 3300 population		Other	

**The following information will need to be submitted for each distribution system entry point**

Entry point Description			Entry point ID	
Contributing Source Water ID's				
<b>E. Contact Time Calculation</b>				
These calculations must demonstrate to the Department that the system can achieve 4 log inactivation of viruses				
<b>F. Chemical Dosing Rate Calculations</b>				
These calculations must specify the chemical pumping rate and the concentration of the primary disinfectant.				
<b>G. Project Flows, Water Temperature and pH</b>			<b>Temperature C°</b>	
Monthly Average (MGD)			Average	
Maximum Monthly Average (MGD)			Minimum	
Peak Hourly Flow (GPM)			<b>pH (circle one)</b>	
Maximum Flow Possible Exiting Contact Chamber (GPM)			6-9	10 Other:
<b>H. Sampling</b>				
Proposed sampling location				
Proposed sampling method				
Proposed minimum chlorine residual (mg/L)				
Proposed sampling reagent disposal mechanism				
<b>I. Chemical Feed Pumps</b>				
The system will need to submit the following: Chemical Feed Pump Specifications, Number of Pumps, Number of Redundant Units, Dosing Rates, and Available Spare Parts.				
<b>J. Treatment Facility</b>				
The system will need to submit drawings of the treatment facility that show the proposed sampling location, raw water taps, chemical feed lines, injection points, chemical storage, day tanks, feed equipment, and secondary containment for chemicals.				
<b>K. Contact Chamber</b>				
The system will need to submit a drawing of the contact time chamber/storage tanks. These drawings shall show any baffling associated with the chambers. Please Specify the Baffling factor associated with each contact chamber/storage tank.				
<b>Contact Chamber Name</b>	<b>Max Volume (Gallons)</b>	<b>Minimum Volume (Gallons)</b>	<b>Baffling Factor</b>	
1.				
2.				
3.				
<b>L. Monitoring Requirements</b>				
All systems that use chemical disinfection must monitor the residual disinfectant concentration using analytical methods specified in EPA 141.74(a)(2) (Analytical and monitoring requirements) at a location approved by the Department.				
1. Systems serving greater than 3,300 people must continuously monitor the residual disinfectant concentration and record the lowest residual disinfectant level each day that the PWS serves water from the ground water source to the public.				
2. Systems serving 3,300 people or fewer must take at least one grab sample every day the PWS serves water to the public or continuously monitor the disinfectant residual.				
Systems collecting grab samples must record the disinfectant residual level each day that the PWS serves water from the ground water source to the public. The system must take a grab sample during the hour of peak flow.				
Systems that use continuous residual monitoring equipment must record the lowest residual disinfectant level each day that the PWS serves water from the ground water source to the public.				
<b>Appeal Process</b>				
Once the Department has specified the minimum free chlorine residual at the approved location it will notify the public water system of the results and the associated monitoring requirements. If the Public Water System disagrees with the determination of the Department it has the right to request a formal hearing to contest the determination in accordance with Article 7 of the Regulations, 5 CCR 1003-1, §7.9.1(g). Requests for such a hearing must be filed in writing with the Department within sixty (60) calendar days after service of the determination and may be submitted to the Drinking Water Compliance Assurance Data Manager at the following address:				
Drinking Water Compliance Assurance Data Manager Colorado Department of Public Health & Environment Water Quality Control Division 4300 Cherry Creek Dr. South, Denver, CO 80246				
Hearings on performance conditions shall be held in accordance with applicable provisions of the State Administrative Procedure Act, Article 4 of Title 24, Colorado Revised Statutes.				

## **4 Log Inactivation of Viruses Certification**

### **SIGNATURE SHEET**

#### **Project and System Information**

System Name	
Project Title	
County	
PWSID	

Directions: Please choose only one of the two options identified below:

#### **Option One. 4 Log Viral Inactivation Compliance Monitoring**

I, \_\_\_\_\_ certify that the \_\_\_\_\_ Public Water System will conduct 4 log viral inactivation compliance monitoring and maintain the Department approved free chlorine residual at the Department approved sampling location as required by the EPA Groundwater Rule. This will exempt the Public Water System from the triggered source water monitoring requirements outlined in the EPA Groundwater Rule.

If the Public Water System chooses to discontinue 4 log viral inactivation compliance monitoring, it must notify the Department immediately. The system will be subject to triggered source water monitoring at any time the system is not conducting 4 Viral Inactivation Compliance Monitoring.

#### **Option Two. Triggered Source Water Monitoring**

I, \_\_\_\_\_ certify that the \_\_\_\_\_ Public Water System will not conduct 4 log viral inactivation compliance monitoring and chooses to conduct triggered source water monitoring in accordance with the EPA Groundwater Rule.

Please contact the Groundwater Rule Manager, Bryan Pickle, with any changes in Groundwater Rule Compliance methodology. Mr. Pickle can be reached at 303.692.3527 or by mail at:

Bryan Pickle  
Ground Water Rule Manager  
Colorado Department of Public Health & Environment  
Water Quality Control Division  
4300 Cherry Creek Dr. South, Denver, CO 80246

#### **Signatures of System Representatives**

<b>Role</b>	<b>Date</b>	<b>Typed Name</b>	<b>Signature</b>
Owner or System Legal Representative			

#### **Signature of WQCD Representative/Reviewer**

<b>Position</b>	<b>Date</b>	<b>Typed Name</b>	<b>Signature</b>

**Entry point ID**

**Department Approved Residual (mg/L)**

**Department Approved Location**